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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/074,175 | 02/11/2002 | Hans-Peter Koch | 10191/2245 | 5019 |

7590 11/26/2004
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One Broadway
New York, NY 10004

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| EXAMINER |
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FONTAINE, MONICA A

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| ART UNIT | PAPER NUMBER |
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1732

DATE MAILED: 11/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/074,175

Applicant(s)

KOCH ET AL.

Examiner

Monica A Fontaine

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12-23 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 8-11 and 24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz et al. (U.S. Patent 5,268,140), in view of Noda et al. (U.S. Patent 5,122,255). Rutz et al., hereafter "Rutz," show that it is known to carry out a method for manufacturing a pressed part from a soft magnetic composite material (Abstract), the method comprising providing a starting mixture including an iron powder and an auxiliary pressing agent (Column 6, lines 27-48), pressing the starting mixture to form a pressed part (Column 6, lines 27-48), and annealing, in an annealing step, the pressed part in inert gas or air (Column 7, lines 15-36; It is hereby noted that air itself is a mixture of gases, approximately 78 percent nitrogen, 21 percent oxygen, and 1 percent of other gases. It is further noted than an "inert atmosphere" would indicate zero percent oxygen.). Although Rutz teaches an atmosphere of approximately 21 percent oxygen or an atmosphere of zero oxygen, he does not clearly teach varying the percentage of oxygen to between one percent and ten percent. Noda et al., hereafter "Noda," shows that it is known to carry out an annealing process in an atmosphere of inert gas and oxygen, a concentration of oxygen in the gas mixture being between 1% and 10% by volume (Figure 10; Column 1, lines 15-20, 65-68). Noda and Rutz are combinable because they are concerned with a similar technical field, namely,

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annealing processes. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Noda's varying oxygen concentrations in Rutz's molding process in order to control the amount of oxidation during the annealing process.

Regarding Claim 2, Rutz shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not clearly teach varying the percentage of oxygen to between two percent and seven percent. Noda et al., hereafter "Noda," shows that it is known to carry out an annealing process in an atmosphere of inert gas and oxygen, a concentration of oxygen in the gas mixture being between 2% and 7% by volume (Figure 10; Column 1, lines 15-20, 65-68), and the gas mixture is a mixture of air and nitrogen (Column 1, lines 15-20, 47-64). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Noda's varying oxygen concentrations in Rutz's molding process in order to control the amount of oxidation during the annealing process.

Regarding Claim 3, Rutz shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein the annealing is performed at temperatures between 380°C and 450°C over a time period of 10 to 120 minutes (Column 7, lines 25-27, 32-33), meeting applicant's claim.

Regarding Claim 4, Rutz shows the process as claimed as discussed in the rejection of Claims 1 and 3 above, including a method wherein the annealing is performed at a temperature of 425°C over a time period of 30 to 60 minutes (Column 7, lines 25-27, 32-33), meeting applicant's claim.

Regarding Claim 5, Rutz shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein the pressing is performed at room temperature at an a pressure of between 600MPa and 900MPa (Column 6, lines 42-44), meeting applicant's claim.

Regarding Claim 6, Rutz shows the process as claimed as discussed in the rejection of Claims 1 and 5 above, including a method wherein the pressing is performed at a pressure between 700MPa and 800MPa (Column 6, lines 42-44), meeting applicant's claim.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz and Noda, as applied to claim 1 above, further in view of Bayer (U.S. Patent 6,383,281). Rutz shows the process as claimed as discussed in the rejection of Claim 1 above, including using phosphatized pure iron powder (Column 4, lines 4-8), but he does not specifically show an auxiliary agent of wax. Bayer shows that it is known to carry out a method for manufacturing a pressed part wherein iron powder is combined with a polymeric wax as an auxiliary pressing agent (Column 2, lines 23-26). Bayer and Rutz are combinable because they are concerned with a similar technical field, namely, that of manufacturing methods which yield heat-treated metal composite articles. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Bayer's auxiliary agent in Rutz's and Noda's molding method in order to obtain a product which has desired chemical and physical properties.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz and Noda, as applied to claim 1 above, further in view of Bock et al. (U.S. Patent 5,047,391).

Regarding Claim 12, Rutz shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not show mechanically shaping sections of the surface of the pressed part. Bock et al., hereafter "Bock," show that it is known to carry out a method of manufacturing a pressed part comprising after annealing the pressed part in a gas mixture of inert gas and oxygen, mechanically shaping at least sections of a surface of the pressed parts (Column 3, lines 24-26). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to mechanically shape Rutz's and Noda's article after annealing, as in Bock, in order to refine the shape of the annealed article.

Regarding Claim 13, Rutz shows the process as claimed as discussed in the rejection of Claims 1 and 12 above, but he does not show grinding his annealed product. Bock show that it is known to carry out a grinding process after annealing an article (Column 3, lines 24-26). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to carry out a grinding process, as in Bock, after the annealing step of Rutz and Noda in order to refine the shape of the annealed article.

Claims 14-23, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz, in view of Bock.

Regarding Claim 14, Rutz shows that it is known to carry out a method for manufacturing a pressed part (Abstract), the method comprising providing a starting mixture including an iron powder and an auxiliary pressing agent (Column 6, lines 27-48), pressing the starting mixture to form a pressed part (Column 6, lines 27-48), and annealing the pressed part (Column 7, lines 15-36). Rutz does not show a postforming procedure. Bock shows that it is known to carry out a

method of manufacturing a pressed part comprising postforming an annealed part and re-annealing the pressed part (Column 3, lines 24-26). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to carry out Bock's postforming process and re-annealing process during Rutz's molding procedure in order to refine and secure the annealed article.

Regarding Claim 15, Rutz shows the process as claimed as discussed in the rejection of Claim 14 above, including a method wherein mechanical shaping takes place as a compression process at a pressure between 600MPa and 900MPa (Column 6, lines 42-44). Rutz does not show carrying out this mechanical shaping prior after one annealing process. Bock shows that it is known to carry out mechanical shaping processes after one annealing process and before another annealing process (Column 2, lines 15-24, 52-65). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to carry out Rutz's and Noda's pressing process after the annealing process, as suggested by Bock, in order to refine the shape of the annealed article.

Regarding Claim 16, Rutz shows the process as claimed as discussed in the rejection of Claims 14 and 15 above, including a method wherein mechanical shaping takes place as a compression process at a pressure of between 700 MPa and 800MPa (Column 6, lines 42-44), meeting applicant's claim.

Regarding Claim 17, Rutz shows the process as claimed as discussed in the rejection of Claim 14 above, including a method wherein the annealing is performed at temperatures between 380°C and 450°C over a time period of 10 to 120 minutes (Column 7, lines 25-27, 32-33), meeting applicant's claim.

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Regarding Claim 18, Rutz shows the process as claimed as discussed in the rejection of Claims 14 and 17 above, including a method wherein the annealing is performed at a temperature of 425°C over a time period of 30 to 60 minutes (Column 7, lines 25-27, 32-33), meeting applicant's claim.

Regarding Claim 19, Rutz shows the process as claimed as discussed in the rejection of Claim 12 above, including a method wherein the annealing is performed at temperatures between 150°C and 400°C over a time period of 10 to 120 minutes (Column 7, lines 25-27, 32-33), meeting applicant's claim.

Regarding Claim 20, Rutz shows the process as claimed as discussed in the rejection of Claims 14 and 19 above, including a method wherein the annealing is performed at a temperature between 230°C and 310°C over a time period of 30 to 60 minutes (Column 7, lines 25-27, 32-33), meeting applicant's claim.

Regarding Claim 21, Rutz shows the process as claimed as discussed in the rejection of Claim 14 above, including a method wherein the pressing is performed at room temperature at a pressure of between 600MPa and 900MPa (Column 6, lines 42-44), meeting applicant's claim.

Regarding Claim 22, Rutz shows the process as claimed as discussed in the rejection of Claims 14 and 21 above, including a method wherein the pressing is performed at a pressure between 700MPa and 800MPa (Column 6, lines 42-44), meeting applicant's claim.

Regarding Claim 23, Rutz shows the process as claimed as discussed in the rejection of Claim 14 above, but he does not show a re-annealing process in air. Bock shows that it is known to carry out an annealing and re-annealing process in air (Column 2, lines 52-65). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to

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anneal and re-anneal in air, as suggested by Bock, during Rutz's molding process in order to capitalize on desirable chemical and physical changes which occur in this type of environment.

Regarding Claim 26, Rutz shows the process as claimed as discussed in the rejection of Claim 14 above, but he does not show a mechanical shaping process after re-annealing. Bock shows that it is known to carry out a method of manufacturing a pressed part comprising mechanically processing at least sections of a surface of the pressed parts after re-annealing (Column 3, lines 24-26). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to carry out Bock's re-annealing and mechanical shaping process during Rutz's molding procedure in order to refine and secure the annealed article.

Regarding Claim 27, Rutz shows the process as claimed as discussed in the rejection of Claims 14 and 26 above, but he does not show grinding after re-annealing. Bock shows that it is known to carry out a method of manufacturing a pressed part comprising grinding after re-annealing (Column 3, lines 24-26). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to carry out Bock's re-annealing and grinding process during Rutz's molding procedure in order to refine the annealed article.

Claim 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz and Bock, as applied to claim 14 above, further in view of Bayer. Rutz shows the process as claimed as discussed in the rejection of Claim 1 above, including using phosphatized pure iron powder (Column 4, lines 4-8), but he does not specifically show an auxiliary agent of wax. Bayer shows that it is known to carry out a method for manufacturing a pressed part wherein iron powder is combined with a polymeric wax as an auxiliary pressing agent (Column 2, lines 23-26). It would

have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Bayer's auxiliary agent in Rutz's and Bock's molding method in order to obtain a product which has desired chemical and physical properties.

Allowable Subject Matter

Claims 8-11 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments, see the paper filed 1 November 2004, with respect to the rejection(s) of claim(s) 1-7, 12, and 13 under Rutz et al. and Bock et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Rutz et al. and Noda et al.

Regarding Claims 14-23 and 25-27, applicant's arguments filed 1 November 2004 have been fully considered but they are not persuasive. The examiner maintains her position that Bock's disclosure of intermediate grinding is indication of grinding as a postforming operation (Column 2, lines 61-64; Column 3, lines 24-30). Although applicant admits that grinding can be performed to create or enhance a form, applicant seems to rely on the possibility that grinding will cause the body to lose all form to refute the postforming grinding operation. Furthermore, although applicant initially contends that grinding is not a postforming operation, he seems to contradict himself by saying "Nowhere does Bock[391] disclose or suggest postforming an

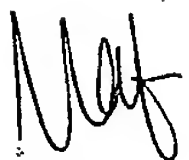
annealed part *by grinding...*" (emphasis added). As stated above, the examiner maintains her position that Bock does in fact teach a postforming operation of grinding between anneals.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A Fontaine whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Colaianni can be reached on 571-272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Maf

November 22, 2004



**MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER**